



# FLIGHT

*The*  
**AIRCRAFT  
ENGINEER  
&  
AIRSHIPS**



First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport  
**OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM**

No. 658 (No. 31, Vol. XIII.)

AUGUST 4, 1921

Weekly, Price 6d.  
Post free, 7d.

## Flight

*The Aircraft Engineer and Airships*

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telegrams: Truditur, Westcent, London. Telephone: Gerrard 1828

Annual Subscription Rates, Post Free

United Kingdom .. 30s. 4d. Abroad .. .. 33s. 6d.\*

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates

\* European subscriptions must be remitted in British currency

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## EDITORIAL COMMENT



T the moment of writing the fate of the airships hangs in the balance. The Secretary for Air has informed Parliament that the policy of the Government remains unaltered, and that, subject to any action to the contrary by the conference of the Imperial Premiers, the airship service was to be discontinued as from Monday last. All work has been stopped with the exception of clearing up, and no provisions are to be made in next year's Estimates for the building of airships, unless in the meantime there is

### The Airships

a change in policy.  
Up to the time of writing no decision had been arrived at by the conference of Premiers, but it is said that both Australia and New Zealand are very keen on developing some sort of an air service between the Mother Country and these Dominions, though there is said to be some difference of opinion as to the shape this should take. It is held by certain of the Dominions that as the British Government owns the ships they should by means of experimental flights show what can be done before the Dominions are asked to commit themselves to any outlay of money. We must say that this is a peculiar point of view to adopt. True, the British Government is in possession of the ships paid for by the money of the British taxpayer. The latter, unfortunate beast of burden that he is, is to be called upon for more money for experiments before the Dominions are asked to find a penny piece, though they stand to benefit equally with the Home Country by the quickening up of Imperial communications. We should have said that if the Imperial Government provided the ships, the Dominions might manage to find the money for the experiments. That, however, is more or less by the way.  
The question which seems to us to be more at issue than any other is of what influences are, or have been, at work to prompt the obstinacy with which the Government adheres to its intentions to scrap the airships in the face of all the protests from experts, and in spite of the precise knowledge of costs which

## DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

- Aug. 27 ... Entries Close for Coupe Deutsch
- Sept. 3-4 ... Belgian Competitions (Brussels)
- Sept. 4-11 ... Brescia Races
- Sept. 10 ... Pulitzer Trophy, Detroit, U.S.A.
- Sept. 18 ... Gordon Bennett Balloon Race
- Sept. 25- ...
- Oct. 2 ... Aero Exhibition, Prague
- Oct. 1 ... Coupe Deutsch de la Meurthe
- Nov. 12-27 ... Paris Aero Salon

we know the Air Ministry to possess. Unquestionably there is more behind it than the public has been given to understand. For example, a Committee has been sitting under the presidency of the Air Minister to enquire into the possibility of using the ships for commercial purposes, and its findings have been submitted to the Imperial Conference. It is understood that these findings are adverse to the airships. Why? And, seeing that it was airships and nothing else with which the Committee were dealing, why was no single airship man asked to give views or information? We do not like the methods of this Committee, and trust that more will be heard of the hole-and-corner methods which it has adopted. As a matter of fact, we believe that the Parliamentary Air Committee is fully alive to the things that have been going on below the surface, and that some rather awkward questions are likely to be put within the next few days. If the truth can be extracted from the Government, we are very much of opinion that it will be found that the condemnation of the airships has at its root the grandiose schemes of the Secretary for the Colonies for a greatly expanded military air service in the Middle East. There is not money enough to be found for developing both the Churchill scheme and the airships, and the latter are to be killed in the interests of the other.

#### Aviation in Canada

According to the official reports, issued by the Canadian Dominion Government, considerable progress is being made in the development of civil aviation in the Dominion. In all manner of ways, aircraft are being shown to possess qualities of great value, not alone in quickening up communications between places in remote parts of the country, inaccessible by ordinary methods of transport, but in ways hitherto only guessed at. For example, seaplanes are being used extensively in the preventive service to stop the smuggling of opium from the Orient. At first sight this would seem rather far fetched, but the matter is in reality quite simple. It had been found that the smuggling was chiefly carried out by men travelling in the ships coming from the Far East who, when approaching Vancouver, dropped the contraband, made up in watertight packages, overboard to be picked up by small craft in waiting. Every inward bound liner is now escorted by a seaplane, which meets her when about two hours out. The aircraft flies at about 1,000 feet, and a sharp look-out is kept for any sign of the suspected smuggling. This has been found to be completely effective, and opium smuggling is for the time being a very unprofitable line of business.

Aircraft are also being extensively used in forest survey work, and a great deal of very useful photographic work is being done for the Forestry Department. The photographing of mosquito breeding grounds is another direction in which very useful work seems to have been carried out. And the movement is still very much in its infancy. Undoubtedly the Canadian authorities appear to have a proper realisation of the potential value of aircraft, and are sparing no pains to discover new uses and new lines of development. They seem to view the new transport with a progressive eye and, what is better, with considerable faith in the future of aviation, both as an aid to Government services and for more commercial purposes.

It may be true that the aeroplane lends itself more

to the purposes of transport and survey in a Dominion like Canada, where distances are great and communications, generally speaking, poor, than it does in a comparatively small country like our own with a highly developed and complex communications system. Nevertheless, we commend the example of the Canadian Government to our own authorities.

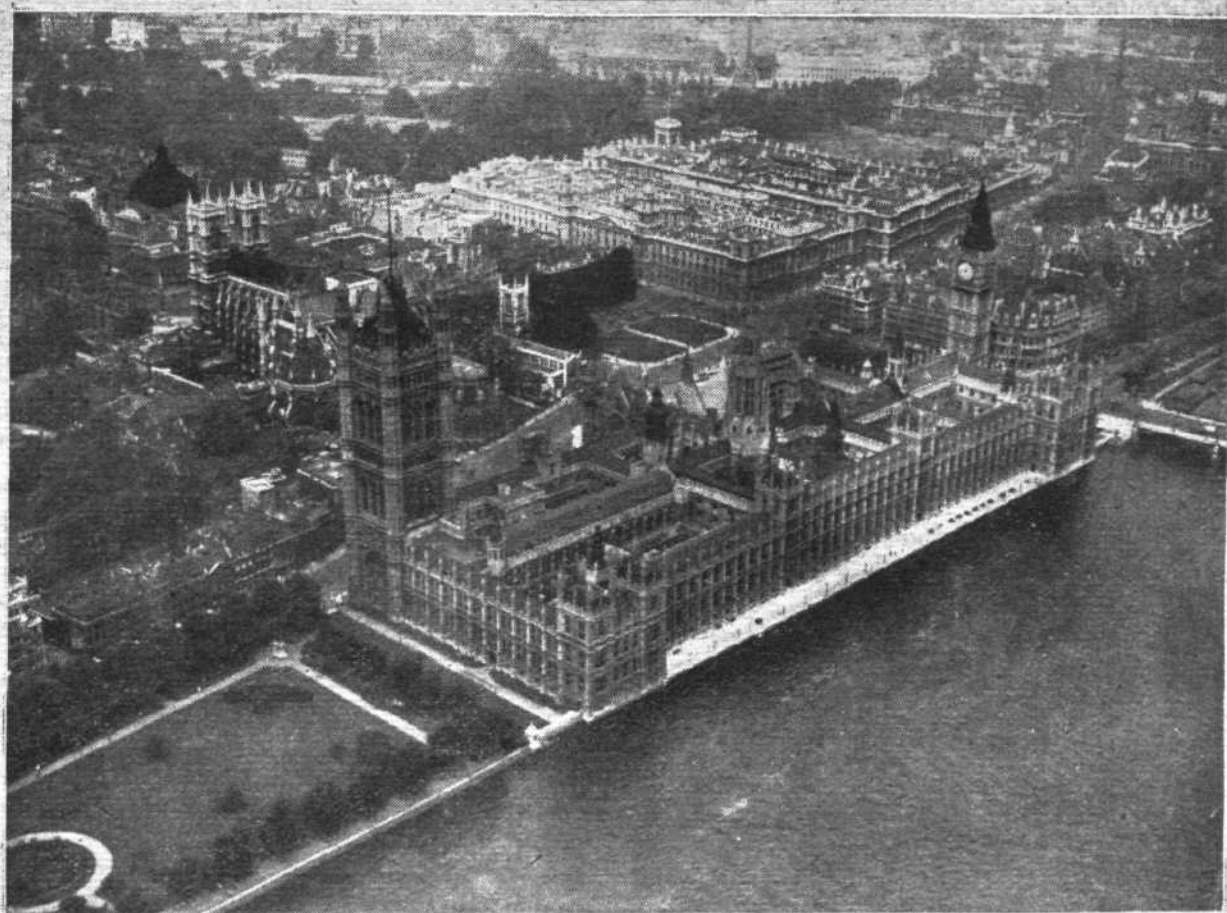
#### Is the R.A.F. in Danger?

Nothing much has been heard for some time of the movement which we know was on foot—and is now, for that matter—for wiping out the Royal Air Force and reverting to the bad old scheme of two Services under the Admiralty and the War Office respectively. We had begun to treasure the hope that the movement was moribund, but from what we have heard recently we are afraid it is very much alive. So much so, indeed, that we have heard it prophesied that within twelve months the Air Ministry, and with it the R.A.F., will have ceased to exist.

It is difficult to know just how seriously to treat such prophecies. Much depends upon who makes them and under what circumstances. In this case, we are satisfied that the prophet in question had means of knowing and access to information which would at least enable him to know what is going on. In this connection we are bound to say that we do not trust Mr. Churchill. Greatly as we admire his many qualities and much as we admit he has done for aviation in the past, he certainly has a genius for intrigue, and we believe that he is even now engaged in working matters for his own ends. Not, let us hasten to say, for any personal reasons. But the Colonial Secretary has the military brain, and is apt to regard all developments from the point of view of the soldier. We have said in a previous article that it is stated, and we believe with truth, that he is at the back of the obstinate stand taken by the Cabinet in the matter of the airships, his reasons being mainly that any money voted for the development he wants applied to schemes of military expansion, with particular reference to the Middle East. It may be objected that Mr. Churchill is no longer Air Minister. We agree that, *de facto*, he is not, but we are not at all inclined to take the view that he does not dictate air policy to his successor. On the contrary, we should require considerable convincing that, while the voice may be that of Capt. Guest, the hand is not that of the Colonial Secretary.

The question that will arise now is: What has all this to do with the reversion to two Air Services and the wiping out of the Air Ministry? That is not at all difficult to answer. We know that there is a section of opinion in both Navy and Army to the effect that it was a mistake ever to have constituted the Air Service as a separate force. It is a powerful mass of opinion too. We do not agree that it is sound, but that is not the point. It exists, and that is enough for the purposes of the argument. Now, so long as the Air Ministry controls its own Estimates, schemes of military aerial expansion in the East must be subjected to close examination, automatically, by Parliament. If, however, the estimates for aerial services are merely a part of the Navy and Army Estimates, there will not be the same scrutiny. Moreover, once we have established the principle of two branch air services, there is room for a third to be administered by the Colonial Office, which could take under its wing the air services of all the Crown Colonies





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LONDON-PARIS FROM THE AIR, AS SEEN FROM A HANDLEY PAGE MACHINE : No. 5.—In the top photograph the Houses of Parliament are seen to the fullest advantage, with Westminster Abbey and St. Margaret's in the background, and also the great block of Government Offices, the Admiralty, the Horse Guards, Whitehall, and beyond St. James' Park, Carlton Terrace, Waterloo Monument, etc. In the lower picture the view is looking straight along Westminster Bridge from the River, towards St. James' Park, with, on the left, Big Ben, Westminster Abbey and St. Margaret's, Victoria Street, etc., and on the right Westminster Station, New Scotland Yard and a block of Government buildings.

and those countries in the East which we are administering by mandate. Civil aviation would be administered by a Department of the Ministry of Transport or the Board of Trade.

We have asked the question: Is the Royal Air

Force in danger? The reply is, we are convinced, emphatically in the affirmative. A very close watch will have to be kept on the Government policy in relation to aerial matters if we are not to awake one morning to a surprise.

## A GERMAN AERIAL TIME-TABLE

THE air is rapidly taking its place among the older forms of transport. The system of regular air lines is constantly spreading, and before many years the whole of Europe will be covered with a network of routes linking up the various capitals and trade centres. An indication of the way in which air transport is becoming established is provided by the time-tables of regular services now being published. The first in the field was a little French publication entitled *L'Indicateur Aérienne*, published by our French contemporary, *L'Air*. This has been supplemented recently by a German time-table compiled and published by the *Deutsche Luft-Rederei*, from whom we have received a copy. The German *Luftkursbuch* is quite an impressive volume, giving very full particulars of no less than 20 regular air lines. Of these, 15 are German services, run within the German boundaries, and totalling close on 6,000 miles in length. Thus one sees that in spite of the handicaps imposed on our late enemies, every effort is being made to make up, within the country, for the obstacles raised to aerial expansion beyond the borders.

The first few pages of the booklet are devoted to tables of services and fares, followed by time-tables of the 20 services which come within the scope of the book. These time-tables are arranged in the usual Continental fashion, the names of the "stations" in the middle of the columns, with the times of departures and arrivals at each side, the left column being read downwards and the right upwards.

With reference to the various services, there is little need for comment. In general, they tally with those mentioned by the Berlin correspondent of Messrs. Handley Page, Ltd., published in *FLIGHT* last week. There is one significant fact which emerges, however. Although, geographically, Germany would appear to have little need of seaplane services, one finds that at least one such is in operation. This runs from Travemünde via Warnemünde and Sassnitz to Swinemünde. In this country, where of all places seaplanes would appear to be called for, we cannot boast a seaplane service, scarcely even a seaplane joy-riding undertaking.

The next section of the book deals with useful information regarding luggage, passports, customs, air mail, air parcels post, etc. As one of the German stipulations in regard to air services is that these should be so timed and planned as to link up with express railway services, notably international ones, a section has been included which gives thorough particulars of important railway connections to all such places of importance as are not at present served by air lines.

In conclusion, it may be added that the *Luftkursbuch* carries quite a large amount of advertising, among which is to be noted a significant announcement by the Hamburg-Amerika Line, which offers, through the *Deutsche Luft-Rederei*, to convey, by special aeroplanes, passengers, luggage and goods to any town in Germany except those in the occupied territories.

## THE LONDON-CONTINENTAL SERVICES

FLIGHTS BETWEEN JULY 24 AND JULY 30, INCLUSIVE

Route†	No. of flights*	No. of passengers	No. of flights carrying		No. of journeys completed†	Average flying time	Fastest time made by	Type and No. (in brackets) of Machines Flying
			Mails	Goods				
Croydon-Paris ...	39	225	12	20	35	h. m. 2 59	D.H.4 G-EAMU (2h. 16m.)	B. (5), Bt. (1), D.H.4 (1), D.H.9 (2), D.H.18 (2), G. (4), H.P. (3), Sa. (1), Sp. (6), V. (1).
Paris-Croydon ...	39	179	12	24	38	2 47	Breguet F-CMAD (2h. 4m.)	B. (5), Bt. (1), D.H.4 (2), D.H.18 (2), G. (4), H.P. (3), Sa. (1), Sp. (5), V. (1).
Croydon-Brussels ...	8	15	4	3	8	2 17	D.H.4 O-BARI (1h. 55m.) ...	D.H.4 (4), G. (1), M. (1).
Brussels-Croydon ...	6	15	3	5	6	2 35	D.H.4 O-BARI (2h. 35m.) ...	D.H.4 (3), G. (1).
Croydon-Amsterdam ...	7	12	6	6	7	3 46	Fokker H-NABM (2h. 57m.)	D.H.9 (1), F. (3).
Amsterdam-Croydon ...	6	15	5	5	6	3 58	D.H.9 H-NABF (3h. 28m.)...	D.H.9 (1), F. (3).
Totals for week ...	105	461	42	63	100			

\* Not including "private" flights.

† Including certain journeys when stops were made en route.

‡ Including certain diverted journeys.

Av. = Avro. B. = Breguet. Br. = Bristol. Bt. = B.A.T. D.H.4 = De Havilland 4, D.H.9 (etc.).  
F. = Fokker. Fa. = Farman F.50. G. = Goliath Farman. H.P. = Handley Page. M. = Martinsyde. N. = Nieuport.  
P. = Potez. Sa. = Salmson. Se. = S.E.5. Sp. = Spad. V. = Vickers Vimy. W. = Westland.

The following is a list of firms running services between London and Paris, Brussels, etc., etc.:—Co. des Grandes Expresses Aériennes; Handley Page Transport, Ltd.; Instone Air Line; Koninklijke Luchtvaart Maatschappij; Messageries Aériennes; Syndicat National pour l'Étude des Transports Aériens; Co. Transaérienne.

### Commercial Aviation in Morocco

IN the Report, dated May, 1921, on the Trade, Industry and Finance of Morocco, issued by the Department of Overseas Trade, is the following reference to Commercial Aviation:—The State-subsidised aerial, mail and passenger service, established in 1919 by the Compagnie Latécoère between Toulouse and Rabat, the administrative capital of the French Zone, was extended in 1920 to Casablanca, whilst the service was increased from eight flights a month to four a week, and will soon be made a daily one. The service has

worked with most commendable regularity, and it is a great boon to business men to be able to travel from Casablanca to Paris in forty-eight hours. The route followed on leaving Casablanca is Rabat, Malaga, Alicante, Barcelona, and Toulouse, which latter is reached on the afternoon of the day following the departure from Casablanca, in time to catch the evening express to Paris.

The passenger fare is about fr. 1,600 for the full flight from Casablanca to Toulouse, whilst letters pay a surtax of 1.25 francs.



# THE SABLATNIG P.3 MONOPLANE

## Germany's First Commercial Aeroplane

As probably the first aeroplane designed especially for commercial work, the Sablatnig occupies a position in Germany somewhat similar to that of Fritz Koolhoven's B.A.T.F.K. 26 in this country. Like a good many other firms, Sablatnig commenced with a converted war machine, the Sab. P. 1. This machine was a biplane of more or less orthodox war-time design, but had a conservatory roof added over the front cockpit. On this machine a flight was made from Berlin to Copenhagen and Stockholm on May 11, 1919. Like other converted war machines, the Sab. P. 1 suffered from inadequate passenger accommodation, and hence it was soon decided that the type was not worth going on with. Dr.

Sablatnig then set to work to design a machine which should possess such features as would make it a commercial proposition. The result was, first, the Sab. P. 2, which was not, however, considered entirely suitable, and a second attempt was made, resulting in the construction of the Sab. P. 3, which is the subject of the present description and illustrations.

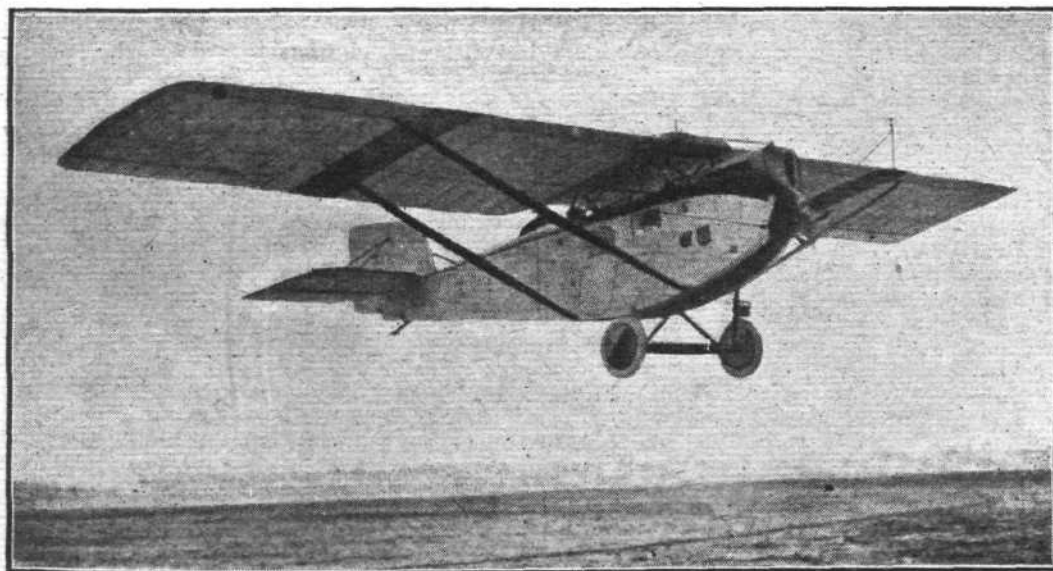
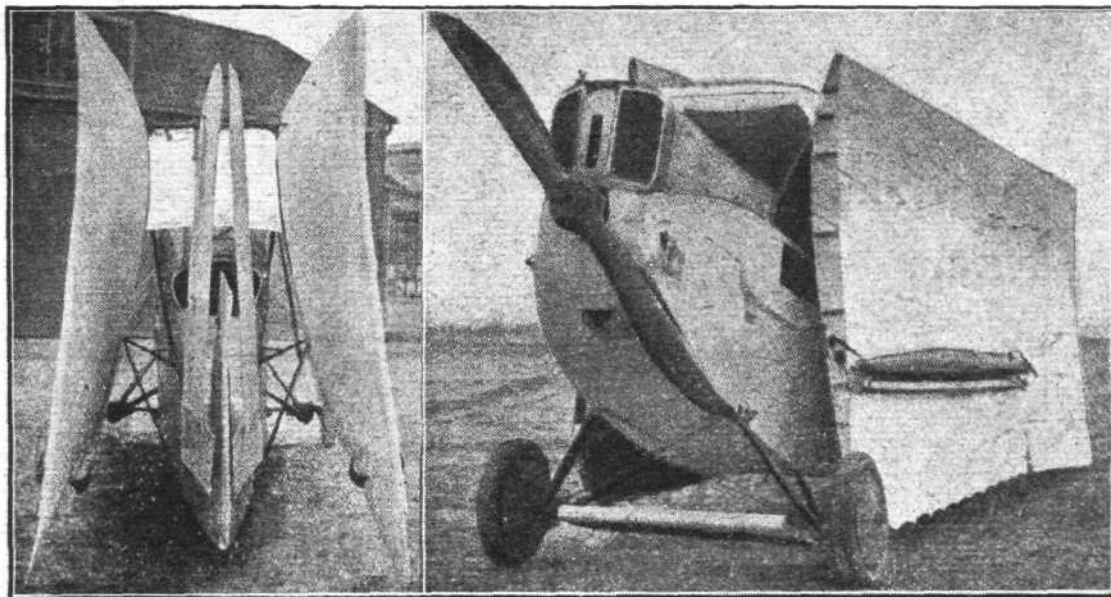
### General Arrangement

As will be seen from the accompanying illustrations, the Sab. P. 3 is a parasol monoplane with a very simple form of strut bracing, in which it differs from the majority of German monoplanes, which are often of the cantilever wing type.



The Sab. P. 3: Three-quarter front view.

The Sab. P. 3: Front and rear views of the machine with wings folded. In the rear view can be seen the tubular pyramid which supports the wings from the sides of the fuselage.



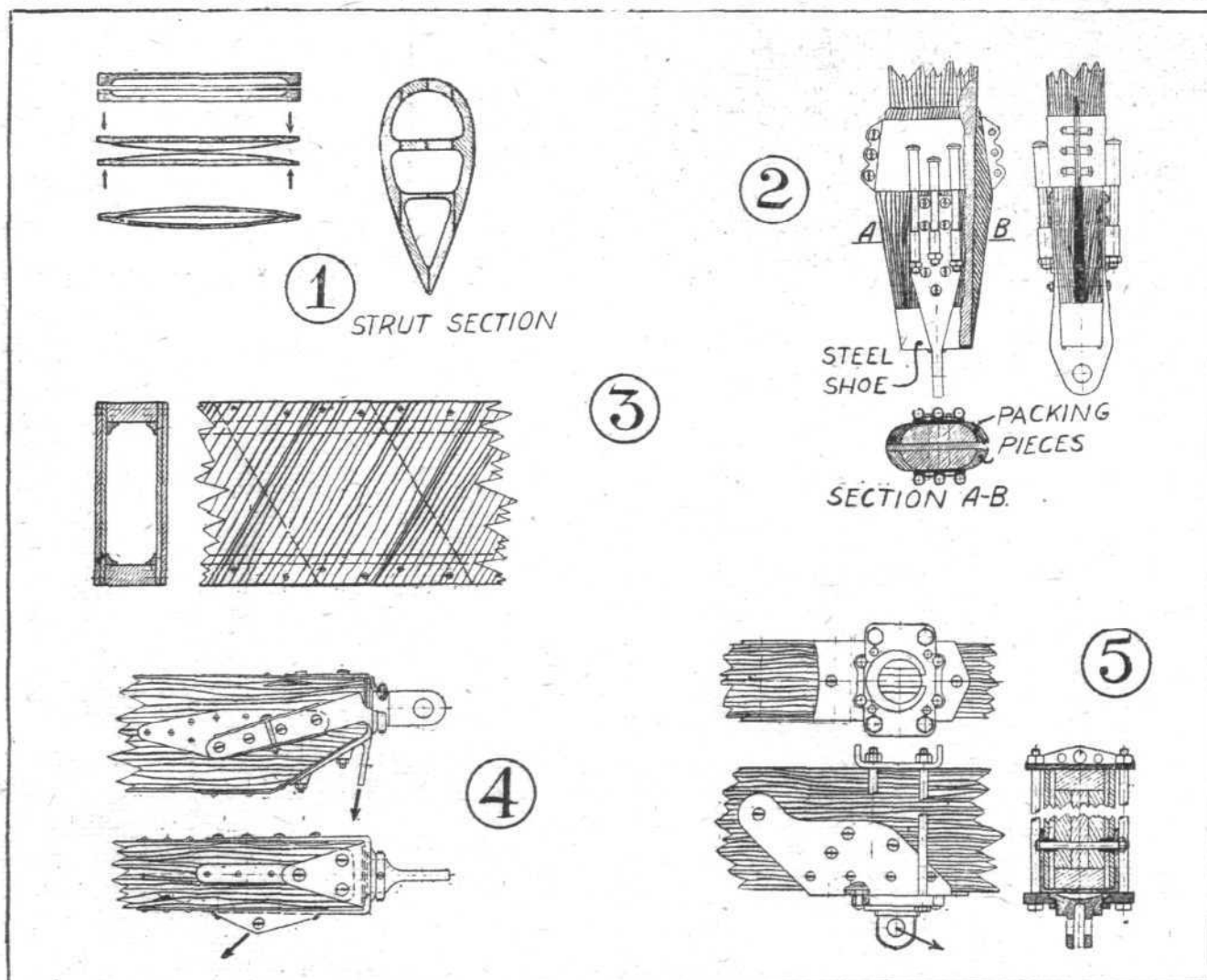
The Sab. P. 3: Getting off.

Dr. Sablatnig's reason for adopting a braced wing may be partly to save weight, but is more probably dictated by the desire to provide wings which fold flat against the sides of the fuselage, an arrangement which would not be possible with a one-piece cantilever wing. Having decided to have folding wings, the problem was to provide the simplest form of bracing so that the wing could be dismantled in the shortest possible time. The form which the bracing has taken will be seen from the illustrations: On each side there is one pair of struts, running from the lower longerons of the fuselage to the wing spars at points slightly nearer to the wing tips than to the root. There is no "incidence" bracing between these struts, but an external drag wire runs to the nose of the fuselage from the point of attachment of the rear strut to the rear wing spar. It would appear to be somewhat doubtful whether this bracing is capable of giving sufficient rigidity, and one would rather expect that the wing might be liable to a considerable amount of deflection, and especially torsion, during flight. However, we are not aware

of such struts, as he does not appear to have taken out a patent in Germany.

From the illustrations it will be seen that the front strut of the Sablatnig is steadied in the centre by a tube running up to the front spar of the centre-section. It would therefore appear that, even with the special strut construction employed, a strut of this length cannot be relied upon to take compressive loads of great magnitude, such as might occur when there is a down-load on the front spar in a steep dive. The problem of a good terminal attachment for these struts is also one of some importance, owing to the change in direction of the load. Fitting ordinary eyebolts into the wood spar would scarcely be satisfactory, as such a bolt might, and probably would, work loose in the wood and give rise to "play." A similar argument applies to the strut fitting itself, and it is therefore not without interest to examine how Dr. Sablatnig has attacked the problem.

The spar fitting by means of which the lift struts are secured, is shown in one of the drawings. First of all a sheet-steel



THE SAB. P. 3. : Some wing details. 1, Diagram showing method of building-up a wing strut, and section of the latter. 2, The unusual fitting on the ends of the wing struts. 3, Diagram of spar construction. 4, End fitting on centre-section spar. 5, Swivel lug attachment of lift struts to main spars.

that in practice this has been found to be so. The manner of building up the wing struts is of more than passing interest, as it appears to be identical with the method invented and patented in this country by Mr. Fairey during the War. As the illustration will indicate, the struts are made of two halves, the inner faces of which are rounded off and the ends forced together, thus putting an initial tension on the outer fibres of the wood. Mr. Fairey has found that such a strut is very much stronger in compression than one made in the usual way, although it would probably be a matter of some difficulty to give satisfactory proof of the why and wherefore. Certainly the outer fibres will not begin to become loaded in compression until a fair load is on the strut, and thus the zero load point occurs at an actual load of so many pounds. On the other hand, the inner fibres are put into compression in making the strut, and might thus be expected to fail earlier than if the two halves had not been stressed originally. However, the fact remains that struts made in this manner have been found to give very good results. Probably Mr. Fairey himself did not originally realise the full advantage

stirrup fits over the lower face of the spar, to which it is secured by horizontal bolts. In order to prevent the tightening up of these bolts from bending the relatively thin sheet steel and thus crushing the wood, it appears that metal bushes are housed in the three-ply sides and spruce fillers of the spar at this point, as indicated in the section of the spar and fitting. This stirrup plate forms a base plate for the swivelling fork-end, which has a circular base working in a cup formed in the second sheet-steel plate. The latter is held to the stirrup plate first by rivets, and later the whole is held together by four long bolts passing up the sides of the spar and through a flanged plate on top of the spar. Incidentally this latter plate serves as the attachment, when the wing is folded, of the rear spar to the tubular pyramid on the fuselage.

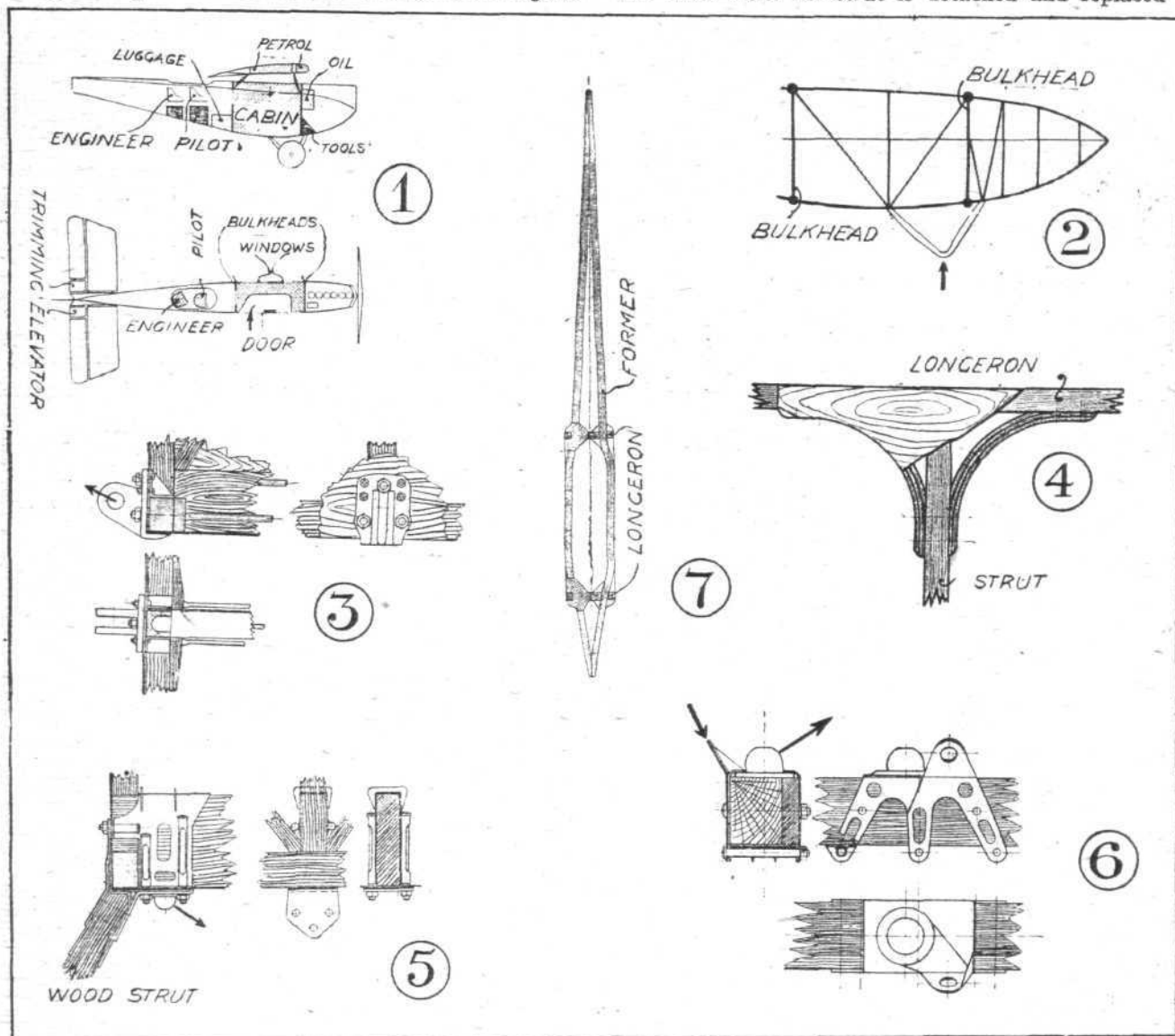
As regards the fitting for the lower ends of the lift tubes, this will be dealt with under fuselage construction. The fitting on the ends of the lift struts themselves is an elaborate affair, necessitated by the fact that the struts may be called upon to work in tension as well as in compression. Perhaps



it will best be understood from an inspection of the accompanying drawings. The compression loads are taken on a steel shoe at the extreme end of the strut. For tension loads there is a forged fitting, divided so as to pass up some distance on each side of the strut. This forging is attached to the strut by horizontal bolts passing through fitting and strut. An ingenious method has been employed for preventing this fitting from pulling off, and for this reliance has not been placed upon the horizontal bolts. Packing pieces of wood are glued on to the front and rear of the strut end in such a manner as to form a cone. Resting on this cone is a sheet-steel fitting made in two halves, which grip the cone fairly tightly. Short tubular lugs are welded on to the sides of the sheet-steel upper fitting and similar ones, presumably forming part of the forging, are provided on the sides of the forked lug. Long vertical bolts pass through these lugs so

glued inside the box spar thus formed in order to increase the area of glued surface. The ribs are of the usual construction. The wing bracing has already been dealt with, and the only other wing detail that calls for comment is the attachment of the wings to the centre section. The latter is permanently fixed on the fuselage by four sloping centre-section struts. For folding the wings, the struts are detached and the wing hinges around the front spar attachment to the centre section spar. The details of the fitting on the latter will be clear from the illustration. The lug on the end of the centre-section front spar is so attached that it can swivel in the spar fitting. Just outside the latter, and secured to the lug by set screws, is a collar which locates the lug in the direction of the spar axis.

The procedure followed in folding the wings is as follows: The main front lift strut is detached and replaced by an



**THE SAB. P. 3 :** Some details of the fuselage construction, etc. 1, Diagrammatic side and plan views of the fuselage, showing accommodation, etc. 2, Diagram of manner in which landing-shocks are transmitted to, and distributed over, the fuselage framework. 3, Lug attachment on lower longeron for wing strut. Note the three long tie-rods running right across the fuselage. 4, Detail of corner brackets in fuselage. 5, Chassis strut fitting on lower longeron. 6, Attachment of centre-section struts to top longeron. 7, One of the formers of the fin, built into the fuselage.

that, should any slack develop, which is scarcely likely owing to the fact that the upper fitting would tend to be drawn tighter and tighter on to the wood cone, it can be taken up on the vertical bolts without interfering with the strut, probably even without removing it from the machine. The fitting looks somewhat clumsy, but gives the impression of immense strength, although the welding on of tubular lugs for the long bolts would appear to be a possible source of weakness.

#### Wing Construction

In the design of the Sablatnig, simplicity and ease of repairs are the fundamental considerations. For this reason wood construction has been adopted, with a minimum of metal parts. The wings, for instance, are built of wood throughout, the spar construction being as shown in the illustration. The flanges of the spar are of spruce, with walls of three-ply wood laid on in two diagonal layers. Corner strips are tacked and

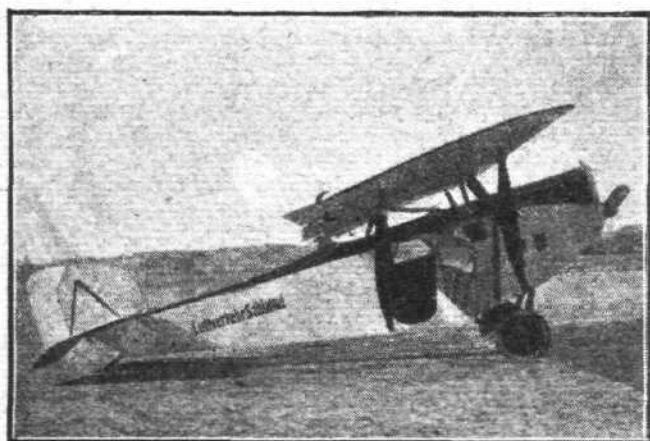
auxiliary strut provided for the purpose. This is of such a length that when the wing is let down by the trailing edge—by casting off the attachment of the rear spar to that of the centre section—the auxiliary strut or prop just reaches the ground while supporting the wing in a horizontal, although edge-on, position. The axis of the bolt through the front spar centre-section lug is now vertical (it is, of course, horizontal when the wing is in flying position), and the whole wing may be swung back parallel to the fuselage, with its convex surface towards the body. On the top surface is a fitting which engages with the apex of a detachable pyramid secured to the sides of the fuselage, as shown in one of the photographs. The rear lift strut is left in place on the wing.

#### The Tail Planes

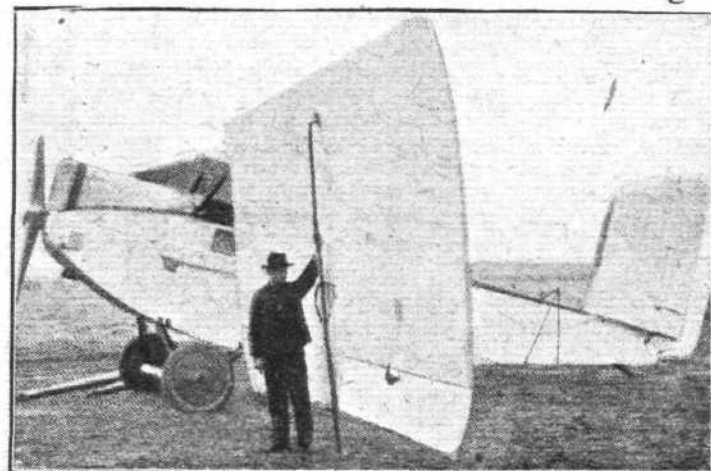
Owing to the proportion of the wing span to fuselage length, it has been necessary to arrange for folding up the

tail plane into a vertical position. This is accomplished by hinging the tail-plane spars. In the first machine the tail plane was of ordinary thin section, and external bracing tubes were provided. In later models, however, the tail plane is, we believe, of thick symmetrical section, and external bracing has been avoided. The construction of the vertical fin is

part of the elevators as separate units, capable of having their incidence altered during flight and locked in desired position. One would imagine that, although such an arrangement is probably easier of accomplishment, from a mechanical point of view, than a trimming tail plane, it can scarcely be



THE SAB. P. 3: Side view.



THE SAB. P. 3: Folding the wings. Note the tail plane folded upwards.

shown in one of the drawings. The formers of the fin run right through, as shown in the drawing, being bent inwards to clear the top *longerons*, presumably to avoid weakening them by joints. On the other hand, as the fin thus forms

very effective, as the auxiliary elevators appear to be too small to have any great effect. It is conceivable, however, that they might serve to prevent the machine getting into a nose dive at terminal velocity.



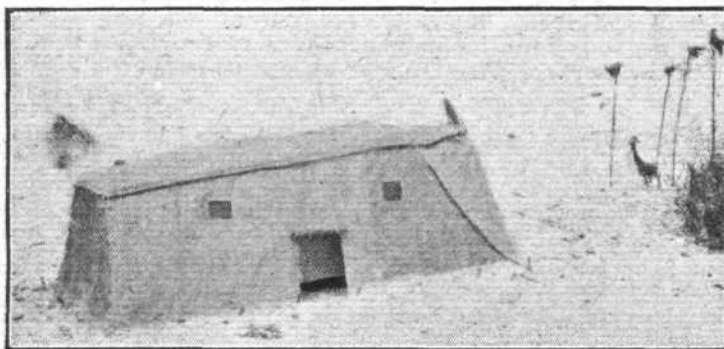
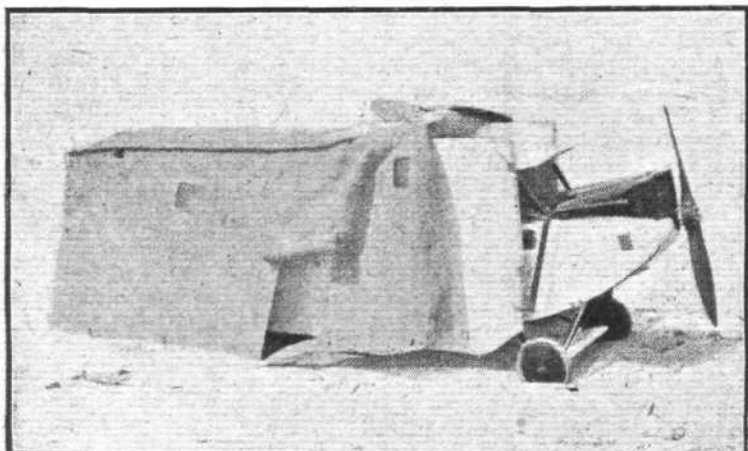
THE SAB. P. 3 : On left, carrying out the skis to the machine. Note the attachments, which fit on to the usual wheel axle. On right, the machine fitted with skis for use on snow.

a part integral with the *fuselage*, repairs might be a matter of some difficulty.

Although the cabin of the Sablatnig is situated immediately under the wing, and any differences in load would not, there-

#### Fuselage Construction

In order to keep it as simple and easily repaired as possible, the *fuselage* construction is practically entirely of wood, ash *longerons* being employed in front, while in the rear portion of the *fuselage* the *longerons* and struts are of pine. The covering is in the form of two thicknesses of three-ply wood panels put on diagonally. In the wood construction itself there is little which calls for comment, everything being very ordinary



THE SAB. P. 3 : On left, putting up the tent which is carried on board; and, on right, the machine in its tent. Note the door and windows.

fore, cause any very great alterations in trim, provision has been made for a certain amount of trimming, as might be necessitated by pilots and engineers of different weight, or passengers sitting near one end of the cabin, by making one

and common-sense. Some of the metal fittings, however, are not without interest. These are mainly the attachments for the lift struts and those of the undercarriage struts. The former are of the type shown in the accompanying illustrations.



Instead of the usual sheet-metal plates with eye bolts going through the *longerons*, the fitting on the Sablatnig has had to be somewhat modified, owing no doubt to the fact that the struts work both in tension and compression. The fork end which receives the lug on the end of the strut is in the form of a forging in which the two lugs of the fork end are integral with the angular base plate. Two long bolts pass through this base plate near its lower end, and run right across to the corresponding fitting on the other side of the *fuselage*. A third bolt passes across in a similar manner near the upper end of the fitting. Two right-angle brackets are bolted on the inside of the main fitting, one in each of the corners at the foot of the vertical *fuselage* strut.

The chassis strut attachment is also shown in a drawing. Generally speaking it is of orthodox type except for the attachment of the holding-down bolts, which appear to be housed in lengths of tubing welded to the stirrup plate going over the top of the deep cross beam. The cables of the undercarriage terminate on this fitting in the well-known German ball-and-socket joint, as indicated in the front elevation of the chassis strut fitting.

### Crew and Passenger Accommodation

As will be seen from the diagrams of the *fuselage* in side elevation and plan, the pilot is seated relatively far aft, much as in the B.A.T., F.K. 26. The cockpit is a fairly large one, and has space behind the pilot for a seat for the mechanic, or, if one is not carried, for a passenger. This seat is slightly staggered in relation to that of the pilot, in order, no doubt, to provide better leg-room within a small space. In the bulkhead in front of him there is a small window. Under the pilot's feet is a small compartment for luggage, while in front of that again is the aft bulkhead of the cabin. The latter is of large proportions for the size of the machine, and has room for six passengers. These are seated, so far as can be gathered, on one long seat running lengthwise along the port side of the cabin, so that if it is desired to carry a patient he can lie full length, while there is still room in the cabin for attendants. The seat is easily removable if it should be desired to use the cabin space for goods. It is even stated that it is possible to get an aero-engine through the door of the cabin, should it become necessary to transport one in a case of urgency.

In addition to the luggage space behind the cabin, there is a small compartment just in front of the forward cabin bulkhead in which can be stored such tools as may be required for repairs or adjustments *en route*.

### Fuel System

PARTLY to get all fuel tanks away from the cabin, and thus lessening the danger of fire, and partly to keep the petrol system as simple as possible, the petrol tanks are mounted in the centre-section of the wing, whence the supply to the carburettor is direct by gravity. As the wing is not nearly so thick at this point as are the deep-section cantilever wings, the tank projects above the upper surface of the centre-section, being shaped to give approximately a high-lift aerofoil section. The oil tank is carried, as shown in the small side elevation of the *fuselage*, on the front cabin bulkhead, immediately behind, and slightly above, the engine.

### To Mont Blanc Summit by Air

ON Saturday, July 30, the Swiss aviator, Durafour, succeeded in alighting near the top of Mont Blanc, and in getting away again safely. Leaving Lausanne on his Caudron biplane, M. Durafour climbed steadily for an hour, by which time he had reached an altitude of about 15,000 ft. After making a couple of circuits around the summit of Mont Blanc while looking for a landing place, he made a safe landing in the snow on the Dôme du Goûter, about 500 metres below the actual summit. The snow field on which he landed sloped fairly steeply, and after a short stay Durafour took off down the slope, and managed to get clear. He was very much worried by the gusts and swirls among the mountains, and is said to have stated that not for a million francs would he repeat the performance. The Caudron was fitted with ordinary landing wheels, but no doubt the long skids helped considerably in preventing it from sinking into the snow.

### Aviation Prospects in Greece

In the Overseas Trade Department Report on the Industrial Situation in Greece for 1920, it is pointed out that at present there are no commercial services in Greece; the Government have received numerous offers to establish aerial mail services, especially between Italy and Greece.

As there is no immediate prospect of such services representing a paying commercial proposition, the terms at which

### The Engine Installation

THE engine fitted in the Sablatnig P.3 is either a 200 h.p. Benz or a 260 h.p. Maybach. In either case the mounting is the same. Two engine-bearers built up of three vertical laminations of wood rest on cradles formed by covering-in skeletons of wood with three-ply faces front and back. The engine is entirely covered in by its cowling, air being admitted through the nose radiator and allowed to escape through a transverse slit in the roof at the rear end of the engine housing. All the engine controls are in the form of rods, and these are carried outside the cabin, where they are covered by an easily detachable aluminium casing on the port side of the *fuselage*. In this manner there is no possibility of the passengers interfering with them, while if goods are carried in the cabin the risk of damage to the controls is avoided.

### Some Special Features

It has already been described how the wings are quickly folded for transport or storage. In the folded condition the Sab. P.3 is so proportioned that it will just go into a German railway truck. On the other hand it might be desirable to carry a hangar on board, in case the machine should be used under conditions which precluded the use of ordinary sheds. For this purpose a small tent has been made which just fits the machine, as shown in the photographs. Owing to the fact that the leading edge of the wings is turned upwards when the wings are folded, it has been possible to avoid the necessity for any tent poles whatever, the leading edges of the two halves of the wing being strong enough to support the tent roof. This tent, which is provided with a door flap and with celluloid windows, weighs about 85 lbs. complete, and is not, therefore, a serious addition to the weight when the machine is used for special work where other accommodation is not available.

For use in winter, experiments—successful we believe—have been made with fitting the Sablatnig with skis, as illustrated in two of the accompanying photographs. This ski undercarriage is so designed as to fit on to the wheel axle instead of the wheels without entailing any other alteration than the substitution of skis for the wheels. The chassis struts and axle remain undisturbed. For use in countries where the ground is covered with snow for a considerable period of the year this undercarriage should be very serviceable.

Altogether the Sablatnig P.3 is a very interesting machine, and, it might be added, one of the few which have been passed by the Inter-Allied Commission.

Following are the main characteristics of the machine:—

Length o.a.	.. .. .	29 ft. 4 ins
Span	.. .. .	52 ft. 6 ins.
Height	.. .. .	10 ft. 8 ins.
Area	.. .. .	485 sq. ft.
Engine	.. .. .	200 h.p. Benz or 260 h.p. Maybach
Weight empty (Benz)	.. .. .	2,940 lbs.
" " (Maybach)	.. .. .	3,080 lbs.
Useful load	.. .. .	1,870 lbs.
Total weight (Benz)	.. .. .	4,810 lbs.
" " (Maybach)	.. .. .	4,950 lbs.
Weight per h.p. (Benz)	.. .. .	24 lbs.
" " (Maybach)	.. .. .	19 lbs.
Speed	.. .. .	93 m.p.h.

some of the proposals have been made are very decidedly favourable to this Government, and have been made obviously with a view to future political and commercial considerations.

The geographical position of Greece is very favourable to the development of aviation, both international and internal. It will be noted that Greece is the natural connecting-link between Europe and Asia Minor and Egypt. Athens is also situated in the centre of New Greece from an aerial point of view, and aerial communications between Athens and Corfu, Dedeagatch, Smyrna and Crete would have great natural advantages.

The drawbacks are (1) that it is extremely unlikely that any such enterprise would be a paying proposition without the grant of a bonus from the Greek Government; and (2) that the routes to be followed are mostly over very mountainous country or over sea.

### Aerial Photographs

COPIES of the aerial photographs, and other photographs which appear in *FLIGHT* from time to time, can be obtained from our official photographers, F. King and Co., Ltd. These prints, on bromide paper (black and white), measuring 8½ ins. by 6½ ins., cost 2s. 6d. each, post free. Orders, with remittance, should be sent to F. King and Co., Ltd., 36, Great Queen Street, W.C. 2.



# LONDON TERMINAL AERODROME

Monday Evening, Aug. 1.

FRIDAY's bad weather, interrupting traffic, prevented the record being broken again this week. As it was, 462 passengers passed through the Customs' house during the week. On Saturday there were 125 passengers—making a record day—and Thursday contributed 95 to the week's total.

None of the French or Belgian machines flew on Friday, owing to the weather in the Channel, and only one of the K.L.M. services was run, Mr. Holmes taking the monoplane from London to Amsterdam. All the British machines, however, completed their journeys, carrying a total of 38 passengers.

Today (Monday) the passenger figures, though high, are not so good as on Saturday. For one thing the "Goliath" was unable to leave Croydon, owing to engine trouble, and, though the Instone Line had 54 passengers booked, some of them did not arrive to claim their seats.

## Getting more Work out of Machines

THE Instone people are now running their aeroplanes in a way which approximates to commercial efficiency, and are in fact getting plenty out of them. Today, for example, the two D.H. 18's and the "Vimy" are scheduled to do the journey to Paris and back. On Saturday the "Vimy," one D.H. 18, and the B.A.T. all flew to Paris in the morning, and duly returned during the evening.

Instone's have, by the way, again beaten their own record by carrying as many as 152 passengers during the week. The Grands Express followed close behind with 130.

There were scenes of great activity on Saturday. Between 10 a.m. and 11 a.m. no fewer than eight machines left the air-station. The Messageries Aériennes sent three away, two with passengers and one with a full load of goods. There were, in addition, the usual monoplane for Amsterdam, three Instone machines with 22 passengers, and a "Goliath." Throughout the entire day there was something happening, as many as 27 machines entering or leaving the air-station—and this apart, of course, from the joy-riding machines.

## Comforts for Passengers

A LARGE stretch of tarmac has now been added to the space for the parking of passenger-cars, and is relieving congestion very considerably.

Further additions are, it is stated, to be made to the tarmac on the aerodrome, and it is certainly to be hoped that, before the winter, it will be extended so that passengers can enter and leave machines without wading—as they have so often been obliged to do previously—through wet grass.

The large number of women passengers now travelling by air, and who persist in wearing flimsy shoes, makes this improvement a very real necessity.

Several interesting "air-taxi" journeys have been accomplished during the week. Mr. Herne, with his Renault-Avro, was engaged to take a lady to Belgium in order that she might reach quickly the bedside of a sick son.

On returning, and when calling in at Ostend for petrol, Mr. Herne was lucky enough to pick up two passengers for London.

## Business Man's Air Trips

CAPTAIN MUIR has been flying backwards and forwards to Wales. It appears that a business man, Mr. Gogo, who has offices in Antwerp, London, and Cardiff, has engaged Captain Muir to fly him between London and Cardiff, and on to various parts of Wales.

They have done this journey three times during the past week, and today (Monday) Captain Muir has flown down to Cardiff to fetch Mr. Gogo to London. He will take him across to Antwerp tomorrow.

Mr. Cobham, of the De Havilland Aircraft Company, received a message—presumably by wireless—from a passenger on an incoming liner who wished for an aeroplane to meet him at Liverpool. Though the message was not received at the De Havilland Works at Stag Lane, Edgware, until 1 p.m., the aeroplane was duly waiting at Liverpool when the liner arrived during the afternoon, and the journey from Liverpool to London was accomplished in an hour and a half, the passenger having ample time to keep a previously-arranged appointment in town which he was in danger of missing owing to the lateness of the boat.

Mr. Cobham also flew to Paris on Saturday with three passengers whom the Instone Air Line had booked, but were unable to accommodate owing to the holiday "rush."

## Another Grass Fire

THE Meteor and Wireless section cricket team are beginning to suspect that there is a conspiracy to interrupt their games by suddenly-started aerodrome fires. The previous fire

occurred while they were engaged in a match, and on Thursday, while they were playing Handley Page Transport, proceedings were again interrupted by fire.

The motor grass cutter, which was working near, had, it transpired, back-fired and set the grass alight.

This time the fire was too much for the aerodrome staff to cope with, and the fire brigade was telephoned for. Two brigades arrived, one from Carshalton, and the other from Croydon.

The particular fire in question was duly got in hand; but not, however, before the airship mast and the temporary hangars had been in peril.

## The Handley Page Service

HANDLEY PAGE Transport are still confining their activities to one machine in each direction daily between London and Paris. This does not seem to be working the machines to their full capacity. The management, however, evidently do not think it worth while to risk the regularity of the service by trying to get more out of the machines in an endeavour to carry some of the numerous passengers to whom, at present, they have to refuse accommodation.

On Friday evening the staff of Handley Page Transport, together with a few aerodrome officials, were invited by the General Manager to the Duke of York's Theatre. During the interval the theatre bar became strongly reminiscent of the Trust House at the air-station.

## Traffic to Amsterdam

CAPTAIN LEVERTON is very pleased with the way passenger bookings to Amsterdam are increasing. There is now a steady stream of travellers, whereas during the first few months bookings were spasmodic. The spare monoplane that is now kept at Croydon enabled Captain Leverton to maintain his service to Amsterdam unbroken, although no machine came from Amsterdam on Friday owing to the weather.

I understand that, if traffic becomes much greater, the heavy seats and luxury fittings of these Fokker monoplanes will be replaced by something lighter but equally comfortable. At present the useful load of the machine is on the small side, and although it gets off the Schiphol aerodrome comfortably with five passengers, four is its limit at Croydon.

## New Air Transport Companies

UNDER the terms of the new subsidy I now hear of two new companies who intend running British services over routes on which foreign concerns have at present a monopoly.

One of the newcomers intends operating between London and Amsterdam, and is calculating on 14 passengers a day, seven in each direction. This should not be difficult to attain next year, taking into consideration the way traffic has grown since flying was resumed on this route in April. At the same time, there is no comparison between the volume of traffic on the Holland airway and on that between London and Paris. On the latter it is, of course, infinitely greater.

Another new company intends operating between London and Brussels. There should be great scope for an enterprising British air-line in this direction. The present service is unsatisfactory, and complaints are received from booking agents who cannot deal with the enquiries they now receive for passages by air to Brussels.

## Bottle thrown from the Air

AN aerial voyager, while nearing Croydon the other day in one of the "air expresses" from Brussels, suddenly threw out an empty bottle, narrowly missing some people on a road below.

The Civil Aviation Traffic Office has now issued instructions that notices are to be displayed in all machines calling attention to the danger and illegality of such a proceeding.

It is interesting to note that before the instruction was circulated the K.L.M. had, on their own initiative, printed and fixed notices to this effect in all their machines.

The airship mooring-mast is still out of action, and the next visit—if any—of the "R. 33" must depend, I suppose, on the official "fate" of the airships.

Three cricket matches have been played during the week, two inter-section championship matches, and one against South Beddington. The results were:—

London Terminal Aero-	South Beddington	..	55
drome	..	..	73
C.A.T.O.	..	..	44
	Instone Air Line		

45 for 3 wickets

Handley Page Transport 53 Meteor and Wireless 15

In the last-mentioned match Tutt took 5 wickets for 4 runs, and Miller 2 for 9 runs.

Today an all-day match is being played against the Lands Directorate branch of the Air Ministry.



## FRENCH CUSTOMS REGULATIONS FOR AIRCRAFT\*

THE following French customs regulations for aircraft were brought into force May 1, 1921:—

Article 8 of the Ministerial Decree under date of January 12, 1921, prescribes, in the case of foreign aircraft landing in France, the payment of Customs duties or the benefit of the regulations as to permit by bond or deposit of the taxes, and, in certain cases, benefit of the regulations of the tryptique.

**Payment of Duty.**—All foreign aircraft landing in France are in principle liable to duty (Customs dues, turn over, etc.); these must be paid obligatorily on all aircraft which are to remain in France.

The duty is relatively high. Calculated according to a table established in 1913, it would come out at not less than 2,257 frs. in the case of a machine weighing 889 kg., and the sum due would be considerably higher for present-day machines, since some of these weigh several thousand kg. The duty is collected without appeal.

In the case of machines which have become nationalised by payment of duty, a detailed permit may be issued by the Customs, which will guarantee re-importation duty-free after each flight abroad.

**Permit by Bond or Deposit of the Taxes.**—These regulations may be applied to foreign aircraft temporarily remaining in France, as for instance in the case of machines belonging to foreign Aerial Transport Companies running regular international services.

The owners are entitled, at the Custom House of entry:—  
1. Either to sign a *permit by bond* by which they undertake to re-export the aircraft within a given period, and, if this condition is not fulfilled, to pay the Customs duty applicable to such machines; in addition they will then be liable to the penalties provided for such cases by the Customs laws.

This undertaking is guaranteed by a security, *i.e.*, by a third party, person or company known to and approved by the Collector of Customs. This party conjointly and severally undertakes the same liabilities and signs the permit by bond at the same time as the principal party concerned.

2. Or, if they cannot give a permit by bond, to pay the amount of the Customs duty, provisionally, into the collector's

funds, the collector to give them a receipt therefor. When the machine has returned abroad, and its departure from France has been duly certified by the Customs service, the sum deposited will be repaid to the owner.

These regulations as to permit by bond or deposit of taxes are currently applied by the Customs to horses, vehicles, bicycles and automobiles.

**Tryptique.**—Members of foreign air touring unions, which are duly approved, may, with respect to their aircraft, be authorised to benefit by the regulations of the tryptique. This privilege is exclusively reserved for associations of States which grant the same advantages to French nationals and requires a preliminary *entente* between the said associations and similar French associations. Under this system the foreign Union is considered to be the owner of the aircraft, and signs in its name the usual undertakings with regard to the French Customs. The French Union stands security for the said undertakings. In order to apply these regulations, the foreign Union issues its members a kind of voucher, which allows them to take their machines into France under the guarantee of the French Union.

This voucher consists of 5 sheets (it originally only had three sheets, hence the name "tryptique"). The last three sheets, two of which give a description of the machine and the undertakings signed, remains with the owner; the other two are detached by the Customs authorities, one (the 1st), when the machine enters France, the other (the second) when it leaves France, or rather by the foreign Customs when the machine returns to the State it started from.

The Customs authorities when detaching sheets 1 and 2, examine and stamp on the third sheet the forms for the certificates of entry and leaving.

If the third sheet to be detached on leaving does not reach the French Customs within the period fixed, the said Customs must apply to the foreign Union, which will request its member to forward the third part of the voucher, which will prove whether all is in order, or the reverse.

The tryptique can only be made use of for a relatively small number of journeys; it applies specially to private aircraft belonging to private individuals who wish to make a short stay in France.

\* Appendix II, *Résumé* of Commercial Information, February, 1921.

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments are notified:—

Wing-Com. C. D. BREESE, A.F.C., from Headquarters, R.A.F., India, to command Aircraft Depôt, India. Date 9.3.21.

Wing-Com. C. G. S. Gould, from Aircraft Depôt, India, to Headquarters, Middle East Area, for Technical Staff duties. Date 9.3.21.

Wing-Com. S. A. Hebden, O.B.E., from No. 25 Squadron (Inland Area), to Inland Area Aircraft Depôt. Date 1.8.21.

Sq./L. C. W. Nutting, D.S.C., from Mesopotamian Group H.Q. (attached), to H.Q., Middle East Area. Date 3.6.21.

Squad-Leader P. A. Shepherd from No. 202 Squadron (Mediterranean Group), to Aircraft Depôt, Egypt (M.E. Area). Date 16.5.21.

Squad-Leader K. Biggs, M.C., D.P.H. (Medical), from Headquarters, Coastal Area, to R.A.F. Central Hospital (Inland Area). Date 18.7.21.

Squad-Leader G. S. Trewin, A.F.C., from School of Naval Co-operation and Aerial Navigation, to Seaplane Training School (Coastal Area). Date 16.7.21.

Wing-Com. J. N. Fletcher, A.F.C., from Inter-Allied Aeronautical Commission of Control (Austria) to Inter-Allied Aeronautical Commission of Control (Hungary). Date 25.7.21.

Wing-Com. J. E. A. Baldwin, D.S.O., O.B.E., from R.A.F. Depôt (Inland Area) to No. 7 Group Headquarters (Inland Area), for "Air" Staff duties. Date 22.8.21.

Sqdn. Ldr. A. S. Glynn, M.B. (Medical), to Headquarters (Inland Area), for duty as Deputy Principal Medical Officer. Date 12.7.21.

Sqdn. Ldr. A. L. Gregory, M.B.E., M.C., from Instrument Design Establishment (Inland Area) to Elec. and Wireless School (Inland Area), for Technical (Wireless) duties. Date 9.8.21.

Sqdn. Ldr. W. S. Douglas, M.C., D.F.C., from School of Technical Training (Men) (Inland Area) to No. 6 Flying

Training School (Inland Area), for Administrative duties. Date 22.7.21.

Sqdn. Ldr. G. S. M. Insall, V.C., M.C., from School of Technical Training (Men) (Inland Area) to No. 6 Flying Training School (Inland Area), for Flying duties. Date 22.7.21.

Sqdn. Ldr. A. R. C. Cooper, from School of Photography (Inland Area) to School of Military Engineering, for R.E. Survey Tour. Date 27.7.21.

Sqdn. Ldr. H. A. R. Aubrey, O.B.E., M.C., from Air Ministry (Director of Equipment) to R.A.F. Depôt (Inland Area). Date 1.8.21.

Sqdn. Ldr. H. E. J. Hewitt, from No. 1 Stores Depôt to Air Ministry (Director of Equipment), for Staff duties. Date 1.8.21.

Sqdn. Ldr. W. J. Shields (Stores), from Aircraft Depôt (India) to Aircraft Park (India). Date 15.4.21.

### Short Service Commissions: Extension of Service.

A limited number of officers who have been granted short service commissions (under the conditions of Weekly Order 781 of 1919, or of Air Publication 793) may be permitted to extend their period of service so as to complete 5, 6 or 7 years on the active list.

Air officers commanding and officers commanding independent formations are to forward, so as to reach the Air Ministry not later than December 1, 1921, lists of short service officers under their command who are desirous of extending their service.

Applicants for extension will be selected according to the number of vacancies, and no guarantee can be given that every officer who applies will be accepted.

Selected officers will remain liable for a period of four years' service in the reserve, and on passing to the reserve on completion of their period of active service they will receive the gratuity of £75 for each year's service on the active list.

# IN PARLIAMENT

## Aerodrome, Catterick Bridge

MR. MURROUGH WILSON on July 26 asked the Secretary of State for Air whether he is aware that the buildings, land, etc., at Catterick Bridge aerodrome are rapidly depreciating in value; and if he will state what is to be the future of this encampment?

SIR L. WORTHINGTON-EVANS. I have been asked to reply. The future of this aerodrome is not yet finally settled, but in all probability it will be required for a mechanical transport training school, and for storage of a certain number of vehicles.

MR. M. WILSON: May I ask the right hon. gentleman whether anything is being done in order to keep this large aerodrome from depreciating in value, and whether he has any idea at all of the waste of money that has been going on for two or three years owing to that depreciation?

MR. LANE-FOX: Is it not a fact that all round the east coast of this country there are these aerodromes rapidly depreciating, and cannot something be done to put them to some useful purpose?

SIR L. WORTHINGTON-EVANS: I cannot answer for aerodromes generally, because that does not come within my province, but this particular one has been set aside for a mechanical transport training school and for storing, and it will probably be used very shortly.

## Mesopotamia and R.A.F. Married Quarters

SIR W. JOYNSON-HICKS, on July 26, asked the Secretary of State for Air whether he is aware of the discontent amongst married officers of the Air Force in Mesopotamia arising from the failure of the Air Ministry to make definite statement regarding their length of service in that country; whether any married quarters have yet been built for officers; whether any wives are allowed to go out; and, if not, how long it is proposed that married officers should be kept there?

THE SECRETARY OF STATE FOR AIR (CAPTAIN GUEST): The length of service abroad for officers of the Royal Air Force has been provisionally fixed at a period of not less than four, nor more than five, years. No officer has been in Mesopotamia for more than 18 months. There cannot, therefore, be any justifiable cause of complaint on this score. No married quarters have yet been built for officers, but the urgency of this question is fully appreciated, and it is hoped that we shall be able to make provision, in this direction, when the policy as regards Mesopotamia is further advanced. Wives of officers are not allowed to go to Mesopotamia at present, for the reason just given. The answer to the last part of the question is, that married officers are liable to serve abroad for the same period as any other officers, and that no preferential treatment can be given in this respect.

SIR W. JOYNSON-HICKS: Is the right hon. and gallant gentleman aware that his last predecessor but one, I think it was, gave very much the same answer six or eight months ago? Will the right hon. and gallant gentleman consider what can be done with regard to this question of married officers?

## Promotion

SIR W. JOYNSON-HICKS asked the Secretary of State for Air how many officers there are with upwards of six years' service who, from various causes, such as wounds or captivity, still only hold the rank of flying officer; whether these officers are at a great disadvantage compared to officers of the Navy or Army with similar length of service and who are given honorary rank of flight-lieutenant when seconded to the Royal Air Force; and whether he can take any steps to allay the discontent in the service arising from this cause?

CAPTAIN GUEST: I am unable to state, without exhaustive research, the number of officers of the Royal Air Force, with upwards of six years' service, who have not received promotion owing to wounds or captivity. Such cases were, however, given special consideration by the Air Ministry Promotions Selection Board. Honorary rank of flight-lieutenant is only given to an officer of the Navy or Army seconded to the Royal Air Force, whose substantive rank in his parent Service was that of lieutenant or captain, and this, therefore, does not place officers of the Royal Air Force at a disadvantage. Promotions are now made half-yearly, by selections, after the recommendations of the Air Officers Commanding have been carefully considered.

## Airships (Imperial Conference Committee)

MR. RAPER asked the Secretary of State for Air what are the terms of reference and proposals submitted to the Imperial Conference Committee appointed to deal with the question of airships; and whether any definite time has been agreed upon for this Committee to make their Report and for the Imperial Conference to come to a decision?

CAPTAIN GUEST: The terms of reference of this Committee are:—  
"To Report on—

"(1) The cost of erecting masts providing bases and fuel supplies, for the upkeep, commissioning and operating of the existing fleet of airships for purposes of Imperial air communications, with special reference to routes between England, India, Africa, Australia and New Zealand.

"(2) Services by means of aeroplanes."

In addition, the Committee will report on the proposals which have been received for the formation of civil companies to operate the airships. The fourth and last meeting has already been held, and it is proposed to hand the Report to the Colonial Office today.

## Royal Air Force

MR. E. HARMSWORTH, on July 27, asked the Secretary of State for Air if he will give the name of the Air Vice-Marshal who presides over the Central Editing Section; what salary he receives per year for carrying out these onerous duties; the number of staff employed; and the cost of the section to the country per annum?

THE SECRETARY OF STATE FOR AIR (CAPTAIN GUEST): Air Vice-Marshal J. F. A. Higgins, C.B., D.S.O., A.F.C., is in charge of the Central Editing Section. His emoluments comprise the pay and allowances of an Air Vice-Marshal of the Royal Air Force, i.e., £2,268 per annum. No extra pay or allowances are received by him in respect of these duties. He is assisted by one clerk, who receives £220 per annum. The cost of the section is, therefore, £220 per annum, and to this may be added the pay of the officer in charge during the period that he is performing these duties.

MR. HARMSWORTH: May I ask whether the clerk at his salary might not carry out the duties himself just as well?

CAPTAIN GUEST: No, Sir. As the hon. member, with his knowledge of the service, will appreciate, there is an immense amount of necessary literature which has to be prepared in the case of the Royal Air Force starting *de novo*.

MR. E. HARMSWORTH asked the Secretary of State for Air the functions of the Directorate of Works and Buildings; the size of the staff and the number of highly-paid technical men in it; and the cost to the country per annum?

CAPTAIN GUEST: The function of the Directorate is to deal with the siting, design and construction of, and the supply of stores and materials for, works and buildings required by the Air Ministry and Royal Air Force at home and abroad; and electrical, water, gas and drainage services and property questions in connection with works and buildings. The cost and number of the headquarters staff of the Directorate of Works and Buildings is shown in Vote 5 of the Air Estimates for the current year 1921-22.

## Airships

LIEUT.-COMMANDER KENWORTHY, on July 27, asked the Secretary of State for Air whether any change has taken place in the announced policy of closing down the lighter-than-air airship establishments on the 1st August next; whether services of the personnel, and in particular the ground and office staffs, will be dispensed with, or whether work will be found for them in other departments; and what annual saving will be effected by the closing down of the lighter-than-air airship establishments?

CAPTAIN GUEST: In reply to the first part of the question, there is no change, at present, in the Government's airship policy. August 1 remains the date. In reply to the second part, I would refer the hon. and gallant member to the reply given by me to the question of the hon. member for Twickenham (Sir W. Joynson-Hicks) on Monday last (No. 97). If the airship service is shut down as from August 1, the saving on this year's Estimates, under this head, should amount to some £150,000.

LIEUT.-COMMANDER KENWORTHY: Arising out of the second part of the answer, may I ask whether the answer to that question did not apply to the regular officers? What will happen to the clerical staffs and civilian staffs employed? Will they be absorbed, or will their services be dispensed with, in order to effect a saving?

CAPTAIN GUEST: Generally speaking, the civilian staff, who have already received notice of this date, will have to find other civil employment. As regards the military staff, they will, in almost all cases, be absorbed.

SIR W. JOYNSON-HICKS asked the Secretary of State for Air if he can now make a statement as to the future position of airships?

THIS is a similar question to the last one. I do not know whether the right hon. gentleman has anything to add in consequence of the recent Committee?

CAPTAIN GUEST: No, Sir. I have prepared an answer to the question. Until the Dominion Premiers have given their decision as to whether they will participate in either or any of the schemes outlined in the Report of my Committee, which was handed to my right hon. friend the Colonial Secretary yesterday, it is not possible for the British Government to lay new proposals before Parliament.

MAJOR-GENERAL SEELY: Are we to understand that, in the event of the Dominion Premiers not agreeing, as we had reason to think they would, in some way to keep this vital service going, the whole thing will be scrapped on August 1, without this House having the opportunity to discuss it either on the right hon. gentleman's salary or in any other way?

CAPTAIN GUEST: Yes, Sir; the suggestion which has been laid before the Premiers by the Committee over which I presided, includes, of course, the scrutiny of the private offer, all of which involves participation and contribution from the Dominions concerned.

SIR W. JOYNSON-HICKS: I have sent a private notice to the Secretary of State for the Colonies, and, if convenient to the House, I will ask it now.

MR. CHURCHILL: I may simply say that I have received the report of my right hon. friend's Committee, and that a special meeting of the Committee of the Imperial Conference is summoned for tomorrow morning.

SIR W. JOYNSON-HICKS: Will the right hon. gentleman be able to make a statement here tomorrow afternoon?

MR. CHURCHILL: No, Sir; because the decision of the Committee will have to be reported to the full Conference.

SIR W. JOYNSON-HICKS, on July 28, asked the Prime Minister whether he is aware that the whole of the airships are being sold for scrap on Monday next; whether negotiations regarding them are still pending with the Dominion Premiers; and whether he will give directions to suspend their sale or destruction until the House has had an opportunity of considering the final results of the negotiations?

MR. RAPER also asked the Secretary of State for Air, when the Expert Committee's Report on Airships will be published, and, whether, in the event of the Imperial Conference not arriving at a favourable decision regarding an Imperial Airship Service before 1st August, the Air Ministry will postpone closing down the airship establishments until at least two weeks after the Expert Committee's Report has been published, so that the business men of this country may be given a proper opportunity of studying the Report before such a serious step as that contemplated by the Air Ministry is taken?

THE SECRETARY OF STATE FOR AIR: The consideration of the Report by the Prime Minister and the Dominion Premiers has been unavoidably postponed until tomorrow (Friday) morning. Until the Report has been thus considered, it will be obvious that I am not in a position to say anything further. With regard to the latter part of the question if the decision of the Imperial Conference is unfavourable, I cannot hold out any hope of postponing further the policy already announced. It should be remembered that no suitable offer has yet been made by private individuals which does not require a large measure of direct financial assistance from the Government.

CAPTAIN W. BENN: Is it the fact that since the Armistice no less than £7,000,000 has been spent on these services which are now to be scrapped?

CAPTAIN GUEST: I think the hon. and gallant Member has asked a question on that and has received an answer.

SIR W. JOYNSON-HICKS: In view of the enormous amount of money spent on these airships, which will be wasted if they are scrapped, can the right hon. Gentleman, without spending more money on them than is necessary, not keep the machines for a few months, in order to see what can be done?

MAJOR-GENERAL SEELY: Cannot the right hon. Gentleman at least keep the designing staff and the trained personnel so that we may not sacrifice the whole value already obtained from an expenditure of £40,000,000 of public money?

LIEUT.-COMMANDER KENWORTHY: Would that not be throwing away good money after bad?

MAJOR-GENERAL SEELY: It is not bad.

CAPTAIN GUEST: Although the policy already announced cannot be departed from, the House will, I think, realise that nothing will be done in the next few days which will prejudice the decision of the Premiers.

MR. RAPER: May I be told when the Expert Committee's Report will be published? Further, will the right hon. Gentleman not consider the possibility of not taking this serious step until the commercial houses, to whom he has referred, have had an opportunity of studying this Report, of which they know nothing?

CAPTAIN GUEST: Permission will have to be obtained from the Imperial Congress before the Report is published. With regard to the other question of the hon. Member, that is practically answered in the reply that the private proposals which have come to us have involved a large measure of financial assistance from the Government.

MR. RAPER: But how can private firms be in a position to make final proposals until they have the valuable information which the expert committee was appointed to report upon?

CAPTAIN GUEST: The proposals which have reached us from private sources are not lacking in expert knowledge. The Report passes no comment on their proposals in detail.

CAPTAIN W. BENN asked the Secretary of State for Air the total cost for the construction, maintenance, housing, personnel, staff, and overhead charges of airships since the date when the control of airships passed to the Air Ministry?

CAPTAIN GUEST: The total estimated cost for the period from 22nd October, 1919, on which date the airships were taken over from the Admiralty, to the present date, is, approximately, £2,266,000.



## NOTICE TO AIRMEN

### Wireless Telegraphy Stations in Operation in Connection with Civil Air Routes

It is notified that:—

The following wireless stations are established for telegraphic operation in connection with civil air routes, and are tabulated by countries. The stations are classified as follows:—

**CLASS "A."**—Stations directly concerned with flying operations, whose routine is primarily intended for aircraft.

**CLASS "B."**—Stations indirectly concerned with flying operations, whose routine is not primarily intended for aircraft.

(N.B.—All stations use a C.W. system, unless otherwise stated, and all times quoted are G.M.T.)

#### I.—British Isles

1. **Class "A" Stations.**—Station: Air Ministry (Call Signal: GFA); Castle Bromwich (GEC); Croydon (GED); Didsbury (GEM); Lympne (GEG); Pulham (GEP); Renfrew (GER).

2. **Class "B" Stations.**—Station: Goswick (Call Signal: BVG); Lerwick (GEL); Poldhu (MPD).

3. **Procedure.**—The procedure to be adopted for W/T communication between aircraft and ground stations is that laid down in the "Handbook for Wireless Telegraph Operators of His Majesty's Postmaster General," obtainable through any bookseller or directly from H.M. Stationery Office, price 6d.

Full details of the radio-telephonic routine on 900 metres are given in Notice to Airmen No. 21 of 1921.

#### II.—Belgium

4. **Class "A" Stations.**—Station: Brussels (Call Signal: BAV).

5. **Class "B" Stations.**—Nil.

6. **Procedure.**—The W/T procedure for communication between aircraft and Belgian ground stations is similar to that in force in the British Isles, described in paragraph 3 above.

#### III.—France

7. **Class "A" Stations.**—Station: Le Bourget (Call Signal: ZM); St. Inglevert (AM); Antibes (AK); Bayonne (AY); Bordeaux (AB); Lyons (AL); Marseilles (AX); Maubeuge (AV); Montelimar (AQ); Nimes (AN); Perpignan (AP); Toulouse (AU).

8. **Class "B" Stations.**—Station: Eiffel Tower (Paris) (Call Signal: FL); Brest (FUE); Cherbourg (FUC); Strasbourg (C3); Toulon (FUT).

9. **Procedure.**—As for stations in the British Isles, described in paragraph 3 above.

#### IV.—Holland

10. **Class "A" Stations.**—Station: Soesterberg (Call Signal: STB).

11. **Class "B" Stations.**—Station: Scheveningen (Call Signal: PCH).

12. **Procedure.**—As for stations in the British Isles, described in paragraph 3 above.

#### V.—Other Countries

13. **Class "B" Stations only in Operation.**—Country: Serbia; Station: Belgrade (Call Signal: HFB); Roumania, Bucharest (BNS); Hungary, Budapest (HB); Spain, Carabanchal (EGC); Norway, Christiania (LCH); Gibraltar (BWW); Sweden (Karlsborg (SAJ)); Denmark, Lyngby (OXE); Germany, Nauen (POZ); Czechoslovakia, Prague (PRG); Esthonia, Reval (ELN); Italy, Rome (IDO); Austria, Vienna (OHL); Poland, Warsaw (WAR).

(Particulars are given in the Air Ministry Notice, of latitudes, longitudes, wave-lengths and routine.)

#### VI.—Cancellations

Paragraph 1 of Notice to Airmen No. 94 of 1920, paragraphs 3 and 6 of Notice to Airmen No. 98 of 1920, and paragraphs 10 to 14 inclusive of Notice to Airmen No. 123 of 1920 are hereby cancelled.

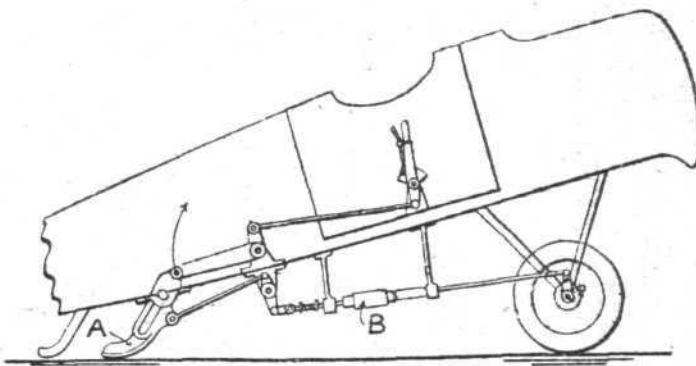
(No. 61 of 1921.)

## AN AUTOMATIC BRAKE FOR AEROPLANES

AMONG those who have been giving their attention to the subject of stopping an aeroplane in the shortest space, after it has landed, is Mr. James E. Mardon, who was led to think over the problem during the War, and has taken out a patent (No. 139,854/19) for his invention. One of the most serious difficulties in the way of fitting a brake to the wheels of aeroplanes is that of making certain that the full force of the brake cannot be suddenly applied—with disastrous results to such a fragile structure as an aeroplane. That has been the defect from which many of the designs of wheel-brakes for aeroplanes tried in the past have suffered—they tend to turn the machine over on its nose. Realising this, Mr. Mardon has devised a scheme of brakes operating on the aeroplane wheels, in which, while the brake-lever brings the brake-system into operation, it only does that, the brake itself being gradually applied with a gradually increasing pressure through the action of a dash-pot or some similar device.

A further development of the device is shown in the drawing; here the brake is automatically applied as the machine lands. A hand brake-lever of the usual type is employed, and when it is in the "off" position the special skid A is drawn up clear of the ground, but when it is put in the "on" position this skid is lowered, so that it can make contact with the ground before the tail skid proper touches. From this it will be seen that the brakes are not applied by the movement of the lever; that only brings the brake-skid, as it may be termed, into position so that

it can automatically apply the brakes on the wheels when the machine lands. In this arrangement, as in the hand-operated design, there is a dashpot, B, which allows for the gradual application of the brake, thus preventing any violent retardation with its risk of overturning the machine.



In the diagram the brake shown is of the band variety, but it need hardly be said that the system can be adapted to any type of brake acting on the wheels. Similarly it is possible to vary the arrangement of brake-lever or to utilise other methods of putting the system in operation, according to circumstances.

### Tokyo Civil Air Port

THE Japanese authorities, it is announced, are making preparations for establishing an aerial port near Tokyo. Urawa, the capital of the prefecture of Saitama and situated at a distance of 30 minutes by train from Tokyo, is reported to be the probable site.

Mr. Hata, the Vice-Director of the Aviation Bureau, states that the aerodrome which is contemplated by the authorities is of an entirely different nature from the military aerodromes at Tokorozawa, Kagamiga-hara, etc., and is intended to be the first of many aerodromes of the kind to be constructed

in Japan, Korea, Saghalien, etc. It is to comprise a training ground, landing-place, warehouses, customs house, hospital, wireless installations, a signal tower, etc., and also equipment connected with aviation at night to be prepared according to the requirements of the Air Convention.

As this new air port will be placed under the control of the Imperial Japanese Aviation Bureau, it would become an important military organ in time of war. In time of peace, however, it will be a welcome training ground for civil aviators, who have long felt the necessity of such a ground.

# AIRISMS FROM THE Four Winds.

£16 10s. was paid the other day at one of Messrs. Hamer, Rooke and Co.'s stamp auctions, for the Newfoundland 3 c. Hawker "Airpost" stamp.

THIS year a couple of parties who attended Goodwood travelled by aeroplane. Next year, from what we hear, there is likely to be a good many following this example.

GENERAL CHEN HUNG has been appointed Director of the Peking-Shanghai Air Service.

LATELY babies seem to figure largely in matters aerial. First it was the mysterious disappearance from Paris of the ten million sterling baby heiress with her mother, Mrs. Bellaris, the wife of an alleged ex-officer in the R.A.F., and later there is to hand from Toronto an account of the adventures of a two and a half years old aerial prodigy. Lorraine Ericson, the discovery in question, only seems to have missed taking charge of the joystick so far. But let the picturesque scribe speak for himself—it's a pity to spoil sport:—

"Her father is a skilled pilot," so the story runs, "and

little Lorraine, almost as soon as she could talk, insisted that she wanted to 'go up,' and when offered rides in a train or tram only burst into tears.

"Lorraine has now flown 3,000 miles, gone through a snowstorm across Lake Ontario, and had experiences such as would thrill a seasoned aviator. She scorns the idea of fear, and says she loves flying.

"Mr. Ericson now goes daily to Toronto from his home in Valhalla, Ont., 35 miles away.

"His great hydroplane, Miss Toronto, is the champion of Canada. Often he takes trips to Detroit and Buffalo, and with him go Mrs. Ericson and Lorraine.

"Last October he found that he would have to make a quick trip to Buffalo by night, and could not take the family. He telephoned home, however, and told his wife that one of his pilots would call in the morning for her and the baby.

"The next day they started, and when they were far up they ran into a blinding snowstorm, but Lorraine did not mind it a bit. The 108 miles were covered in less than an hour, despite the atmospheric difficulties."

We may expect the next to compete to start aerial life at about 001 of a minute old.



**Silly questions we have been asked :**

I.—"Hullo! Old thing—Crashed?"



# THE ROYAL AIR FORCE

London Gazette, July 26, 1921

## Short Service Commissions.

The following are granted short service commissions, in the ranks stated, with effect from and with seny. of the dates indicated, except where otherwise stated:—  
*Flying Offrs. from Flt. Lieuts.*—W. M. Fry, M.C. (July 18). I. M. Matheson; July 14. G. F. Smylie, D.S.C.; July 16. P. Wilson, M.C.; July 18.  
*Flying Offrs.*—T. H. French, D.F.C.; July 18.  
*Flying Offrs. from Pilot Offrs.*—H. S. R. Burt; July 12. L. G. Lucas; July 13. M. W. C. Ridgway; July 12.

*Note.*—The above-named Flt. Lieuts. who are granted short service commissions as Flying Offrs. will be placed at the head of the list of Flying Offrs., but junior to all offrs. similarly reduced in rank on the grant of permanent or short service commissions.

## Seconding.

Lieut. H. Aldridge (E. Surrey R.) is granted a temp. commn. as a Flying Offr. on seconding for four years' duty with the Royal Air Force, with effect from and with seny. of July 6 (substituted for *Gazette*, July 12).

## Flying Branch.

*Gazette*, May 20, 1919, concerning Sec. Lieut. J. D. Scott is cancelled. *Gazette*, July 22, 1919, stands.

## Technical Branch.

Lieut. C. Reynolds is placed on the Retired List on account of ill-health contracted in the Service; July 21. Lieut. J. McLaren is transf'd. to the Unemployed List; July 19.

## Medical Branch.

Flt. Lieut. T. N. Wilthew relinquishes his temp. commn. on ceasing to be

employed, and is permitted to retain the rank of Capt.; June 30. Lieut. R. E. Burns, M.B., is transf'd. to the Unemployed List; Feb. 11, 1920 (substituted for *Gazette*, March 16, 1920).

## Chaplains' Branch.

The Rev. H. Marshall, M.A., is granted the relative rank of Wing-Comdr. for purposes of precedence, administration, and discipline; July 8.

London Gazette, July 29, 1921

## Permanent Commissions.

Sqdn. Ldr. J. C. P. Wood is placed on half-pay, Scale A, from March 21 to April 8 inclusive, and from June 16 until further notice (*Gazettes* April 12 and June 24 are cancelled). Wing-Com. F. D. M. Robertson, D.F.C., to be Deputy Director, Class 2; July 27). Group-Capt. J. L. Forbes, O.B.E. relinquishes appt. of Deputy Director, Class 2; July 27.

## Resecoding.

*Gazette* April 27, 1920, regarding Group-Capt. L. F. Blandy, D.S.O. (Maj. and Bt. Lieut.-Col., R.E.) is cancelled.

## Flying Branch.

Lieut. H. D. Arkell (unempld. list) relinquishes his temp. commn. on joining T.F.; March 23.

## Administrative Branch.

Sec. Lieut. J. G. Berry relinquishes his temp. commn. on ceasing to be employed; Aug. 24, 1918 (substituted for *Gazette* Sept. 26, 1919).

## Memorandum.

One Flt. Cadet is granted an hon. commn. as Sec. Lieut. with effect from date of his demobilisation, and relinquishes his commn. on appt. to T.F.; July 21.

## ROYAL AERONAUTICAL SOCIETY NOTICES



*Scottish Branch.*—The following have been elected to the Scottish Branch:—*Member*: Capt. A. Douglas S. Barr. *Associate Members*: A. P. Donald, Capt. A. McR. Moffatt.

*Lecture Programme.*—The programme of lectures for 1921-1922, being the Fifty-Seventh Session since the inauguration of the Society, so far as at present arranged, is as follows:—

1921.  
 Nov. 3 .. "Manœuvres of Getting off and Landing." R. M. Hill (Sq. Ldr.).  
 Nov. 17 .. "Requirements and Difficulties of Air Transport." Col. F. Searle.  
 Dec. 1 .. "Design of a Commercial Aeroplane." Capt. G. de Havilland.  
 Dec. 15 .. "Development of the Fighting Aeroplane." Capt. F. M. Green.

1922.

- Jan. 5 .. "Specialised Aircraft." Wing Cdr. W. D. Beatty.  
 Jan. 12 .. Juvenile Lecture. (Lecturer to be announced later.)  
 Jan. 19 .. "Aeroplane Installation." Brig.-Gen. R. K. Bagnall-Wild.  
 Feb. 2 .. "Radiological Research and the Examination of Materials." Dr. V. E. Pullin.  
 Feb. 16 .. "Methods of Instruction in Aeroplane Flying." Sq. Ldr. Portal.  
 March 2 .. "Testing Aircraft to Destruction." W. D. Douglas.  
 March 30 .. "Airships." (Lecturer to be announced later.)  
 April 6 .. (Subject to be announced later.) Mons. Breguet.  
 The lectures will be held in the Theatre of the Royal Society of Arts, Adelphi, at 5.30 p.m.

W. LOCKWOOD MARSH, Secretary.

## INTERNATIONAL COMPETITION IN BELGIUM

THE Aero Club of Belgium is organising, under F.A.I. rules, an International Competition to be held at Brussels on September 3 and 4 next. The competition is stated to be for touring machines, but as the effective engine power is not to exceed 100 h.p., the machines would scarcely come within what is considered a modern touring machine. Nevertheless, the competition should help to stimulate the interest in the low-power single-seater or two-seater aeroplane, and we trust to see at any rate a few British machines entered. For instance, the Avro Baby should be very suitable for the competition, as would also the Sopwith Pup and Bristol Babe. At the moment one cannot think of a two-seater, other than the Avro, with an engine of under 100 h.p. The notice is rather short, entries not being received after August 27. The entrance fee (returnable if machine starts) is 100 francs.

In order to qualify for the competition, machines must first complete the following circuit:—Brussels-Gosselies (landing), 28 miles; Gosselies-Ostend (landing), 80.5 miles; Ostend-Brussels, 70 miles. Competitors will be classified according to the following points:—A, 15 points for transport capacity

in relation to engine power. B, 15 points for speed range; the low speed will be flown over a course from Brussels to Dieghem and back (6 miles) and the high speed on the Brussels-Gosselies course. C, 15 points for construction, under the following heads:—1, materials employed; 2, form of construction; 3, minimum of truing-up. D, 10 points for general handiness. E, 10 points for easy of dismantling and erecting. F, 10 points for quick get-off. G, 10 points for minimum run after alighting. H, 5 points for ease of starting the engine by the pilot. I, 5 points for comfort. J, 5 points for lowest price, bearing in mind the number of persons carried. Total, 100 points.

The machines must be at the Brussels aerodrome on September 2, and will be exhibited there.

The prizes are:—The Simonet Cup, value 1,300 francs for the competitor scoring the highest number of points. Cash prizes for each class as follows:—A, 1,000 francs; B, 1,000 francs; C, 1,000 francs; D, 750 francs; E, 750 francs; F, 750 francs; G, 400 francs; H, 400 francs; I, 400 francs; J, 400 francs. The total value of the cash prizes thus amounts to 6,850 francs.

## Swiss Military Air Service Records

THE following information regarding Swiss air work is published:—

12,380 flights of a total duration of 3,532 hours were carried out by the Swiss Air Force during 1920.

Accidents were as follows: 2 machines slightly damaged, 3 bad landings (machines standing on nose), 2 machines

turned turtle (forced landings), 1 crash in getting off (machine totally wrecked).

No one was injured in these accidents, but there were two deaths as the result of crashes during non-service flights. The training of airmen, which included an average of 10 hours flying per month, paid special attention to the development of safety in flying.

